



CENTRAL CASCADES ADAPTIVE MANAGEMENT AREA

News

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Fun in the sun, in the forest, in the office! What a summer. We had a busy Winter and Spring completing projects (understory burning), progressing through projects (Middle McKenzie Landscape Design, and the Young Stand management), and sharing what we are learning (Designate by Description field trip and Restoration workshop).

We are busily planning for next year. However, we want to take time out and talk with our public so on August 11, 2001 from 11:00 - 1:00 p.m., Eugene Bureau of Land Management (BLM) and Willamette National Forest (WNF) will host Conversations in the Courtyard. The public will have an opportunity to meet with the leaders of Eugene BLM District and Willamette National Forest. Come talk to them about your ideas, concerns and questions about the forests on the Eugene BLM District and WNF.

LANDSCAPE ANALYSIS AND THE MIDDLE MCKENZIE LANDSCAPE DESIGN

Historically, fire played a major role in shaping forested landscape patterns and habitats. Today, fire still plays a role in shaping landscape patterns, but often the role of fire is secondary to patterns fixed by land ownership and use. In forested landscapes on federal land, Forest Service and Bureau of Land Management agency personnel have been examining the role of fire on the landscape. On April 3, 2001, a group of people, interested in this topic, met in the Umpqua National Forest Supervisor's Office in Roseburg to discuss the results of their landscape analyses using fire disturbance as a basis for management strategies. Fire history and management strategies were discussed for lands within the Little Applegate River, Little River, Rogue River, Brice Creek and the McKenzie River. Much of this work has roots in landscape plans developed in the Central Cascades Adaptive Management Area through the Blue River Landscape Study and Augusta Creek.

Several common themes emerged from comparison of the various landscape analyses:

- *Prescribed fire was planned to reduce risks to older forests in fire-prone landscapes.*
- *Timber harvest rates (or rotation ages) were redefined to more closely match historical rates of disturbance.*
- *Timber harvest approaches (e.g., uneven-aged management, or levels of green tree retention) were selected that results in stand and landscape patterns that more closely matches historical patterns.*
- *Prescribed fire was integrated with timber harvest prescriptions to the degree feasible.*
- *Preferred locations for long-term reserves were identified in areas that experience severe fire infrequently.*
- *Consideration of existing conditions and objectives were integrated with historical information.*

Closer to home the Eugene BLM portions of the Central Cascades Adaptive Management Area have been included in the Middle McKenzie Landscape Design (MMLD), now in the process of peer review.

Fire history information was used as a basis for the landscape design in

an attempt to manage the landscape within the range of natural variability. Our assumption is that if we create future landscapes within this range, we are more apt to be maintaining the ecological functions and habitats native to this watershed. From the fire history information and knowledge about fire patterns, we developed a landscape design that includes the following components:

- *large blocks of undisturbed habitats*
- *areas that will have a degree of disturbance patterned after historical fires*
- *higher amounts of green trees, down wood and snags left after a regeneration harvest*
- *longer rates of regeneration from 80 to 100 -180 years*
- *density management prescriptions that develop or maintain larger trees, maintain or increase tree growth, increase stand structure diversity, and develop wind firmness in existing stands*

The Middle McKenzie Landscape Design is designed to:

- *maintain watershed functions*
- *provide for threatened and endangered fish and wildlife species, and riparian dependent species*
- *maintain water quality*
- *use information from the fire history study to help manage the Landscape*

The next step for the MMLD is public discussion and in FY 2003 start the NEPA process for managing the vegetation in the landscape area. Opportunities to give input to this process are available by contacting Trish Wilson at 541-683-6448 or Trish_Wilson@or.blm.gov.

- Trish Wilson, Eugene District Bureau of Land Management, and John Cissel, Willamette National

North Fork Quartz: Understory Burning and Monitoring

Implementation of the Blue River Landscape Study entered some new and interesting territory this spring when prescribed low-severity fire was applied to several blocks of the North Fork Quartz Creek watershed. These blocks were harvested in 1999-2000 with a partial cut prescription intended to leave 50% canopy cover on the site. Prescribed burning for hazardous fuel reduction is nothing new. And burning where some live trees were retained in harvest units is not new. But burning large blocks with post-harvest slash and high levels of live tree retention presented some new and interesting challenges.

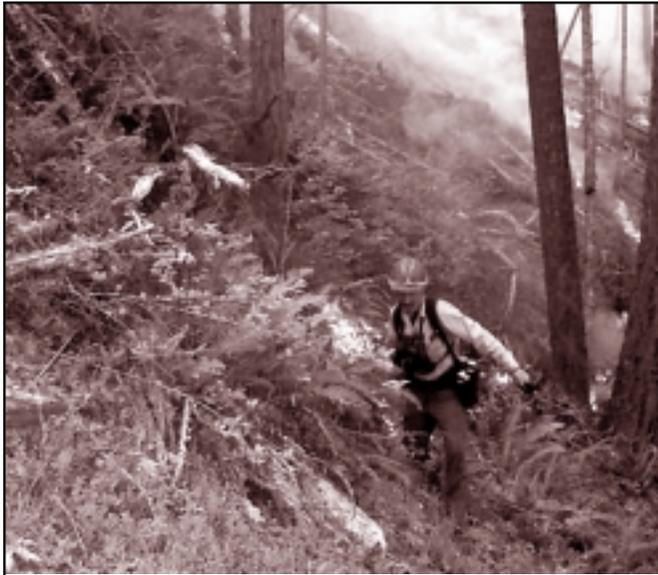
Objectives for the North Fork Quartz Timber Sale are based on implementing the Blue River Landscape Strategy. "The purpose of the Blue River Landscape Project is to develop,

demonstrate and test an integrated landscape management strategy to achieve ecological and social objectives based upon historical disturbance regimes for the Blue River watershed (approximately 57,000 acres). The primary goal is to sustain native habitats, species, and ecological processes while providing a sustained flow of wood fiber for conversion to wood products. The general assumption is that the more future landscapes resemble historical landscapes, the higher the likelihood of retaining native habitats, species and ecological functions."

Habitats and ecological processes are expected to more closely resemble historical conditions where low-severity fire (0-30 % mortality of overstory trees) is restored. While many direct effects of high-severity fire are well known, knowledge of the influence of fire on habitats and other ecological

processes is incomplete, especially for low- and moderate-severity fires. Goals for prescribed fire are to:

- *Kill a small proportion of overstory trees to create snags and future down wood.*
- *Reduce fuel loading and fuel ladders lowering the probability of future high-severity fire.*
- *Stimulate herb and shrub growth by increased light levels and through an initial flush of nutrients released by the fire.*
- *Provide horizontal heterogeneity to understory habitats.*
- *Provide a mix of fine-scale habitats similar to historical conditions following low-severity fires.*
- *Provide research and monitoring opportunities to study the effects of low- and moderate-severity fire on plants and animals under a variety of stand structures. (BRLS, 1997 PG 15))*



A firefighter puts flame to a unit

Unusual weather patterns this winter and spring presented additional challenges to fire managers attempting to meet these objectives in the North Fork Quartz Creek harvest blocks. A dry winter followed by spring weather characterized by spells of hot and dry mixed with periods of rain. Finding the weather and fuel moisture conditions dry enough to carry the fire, but not too hot to cause excessive mortality in the overstory has been tricky.

First attempts at burning in block 9 erred on the safe side of tree mortality and resulted in much



Mosaic landscape pattern of burned and unburned patches

lower than prescribed overstory mortality. In block 2, multiple aspects and severe changes in humidity as the day progressed caused some larger patches of fire-killed trees. Standard objectives from past burning projects would have found these burned patches unacceptable. Under the disturbance regime objectives of the Blue River Landscape Study a distribution of patches of burned and unburned overstory are the desired end result (see landscape photo).

The application of fire within the North Fork Quartz timber sale is one step in the process of adaptive learning. The research that went into the Blue River Landscape Study led to an alternative approach to manage the ecosystem. Now these theories are being tested on the ground. A set of monitoring projects are underway to measure the effects of these treatments. Permanent plots are installed to measure tree, shrub, and herbaceous community response in both upslope and riparian environments, and a series of streams are being monitored for potential stream temperature, amphibian and channel morphology responses. Post-treatment measurements will be taken this summer. Findings will be evaluated and compared to expected results and past practices, and widely shared. Using new information to ask new questions and to adapt practices connects the loop of adaptive learning.

Future plans within the Blue River watershed include prescribed burning of mature stands without associated timber harvest. Monitoring

This issue of the the CCAMA Newsletter was edited by Trish Wilson and designed by Christie Hardenbrook.



Fire creeping through the understory

efforts carried out on these sites will help us better understand the effects of understory burning on vegetation and wildlife. Factors such as weather conditions, aspect, elevation, slope, soil type, plant association can all affect the outcome of the burn in relation to succession patterns after a fire. Timing of the burn in spring or summer can affect the type vegetation that sprouts after the fire. Plants that have adapted to hot, fall fires may react differently to a cooler spring burn. There are a large number of unknown effects from prescribed fire. One of the goals of the Central Cascades Adaptive Management Area and the Blue River Landscape Study is to help answer some of these questions.

- Sam Swetland, Willamette National Forest

Progress with Young Stand Management

Adaptive management is moving forward at a rapid pace on this very current topic. Locally, 2001 marks the third re-measurement period following implementation of the Young Stand Thinning and Diversity Study in 1994-1996 (www.fsl.orst.edu/ccem/ystd/ystd.html).

Crews are re-measuring vegetation, songbirds, ground-dwelling mammals, chanterelle mushrooms, and selected invertebrate species to get an updated view of how these stands are responding to various active and passive management approaches. Light and heavy thinning treatments, small clearings, underplanting, and snag creation techniques are being compared to an unmanipulated stand. All stands in the study are approximately 35-45 years and regenerated following clearcutting in the 1950s. Join scientists and managers involved in the study on a field trip to visit the study sites and to hear the latest findings first-hand on July 31, 2001.

Another resource to learn about the latest science findings and management applications on this topic is the recently revised Communiqué on Young Managed Stands. The communiqué,

authored by Matt Hunter, reviews current science findings, discusses application of new science information, summarizes results from the Young Stand Diversity and Thinning Study, and provides summaries of other relevant research on this topic. On a regional scale, the issue of thinning young stands in Late-Successional Reserves has been identified as a candidate for adaptive management based on an inter-agency review of recent science findings. Late-Successional Reserves were established in the Northwest Forest Plan in 1994 as locations where restoration and maintenance of old-forest habitat has top priority. Some recent research has indicated that many old stands developed at much lower densities than exist today in many plantations in these reserves.

A regional review is underway to evaluate this research, to put context to these findings, and to recommend adjustments to management practices and priorities, if warranted. The Communiqué on Young Managed Stands referenced above summarizes much of the new science underpinning this review.

- John Cinsel, Willamette National Forest

FOR A COPY OF THE COMMUNIQUE ON YOUNG MANAGED STANDS PLEASE VISIT:

WWW.FSL.ORST.EDU/CCEM/YSTD/YSTD.HTML

OR CONTACT

PAM DRULINER AT 822~1212

Designate by Description, an AMA Project

Designate by Description is an approved method of designating timber for cutting without marking the timber prior to sale. It meets the National Forest Management Act requirements that government agencies maintain control over every tree that is cut. Basically it involves leaving the largest tree and cutting all the trees within a given distance of that tree. Sounds too simple to be true, but it works. It doesn't matter where you start in the unit, each tree is either a cut tree or a leave tree. Other variables can be added to increase species diversity, density and quality of the stand.

This method has been used successfully on four thinning sales on the Sweet Home Ranger District of the Willamette National Forest. The purchaser of the timber sale is responsible for compliance with the designation provision (C2.35#) of the contract, which is monitored by the sale administrator. Final acceptance by the Forest Service comes after logging is completed.

Monitoring has shown compliance with the provision at approximately 97 percent. Most mistakes are in not cutting trees that should have been cut. Rarely is a larger tree cut that should have been left.

Although the sale administrator does have to spend more time at the beginning of the sale making sure that the purchaser gets started correctly, this method has significantly decreased our cost for marking thinnings. This is due to the fact that the cost of marking is passed on to the purchaser and will be reflected in the bid.

For more information Designate by Description, please contact, Keith Murray 541-367-9216.

- Keith Murray, Willamette National Forest

A Recipe for Sharing Adaptive Strategies

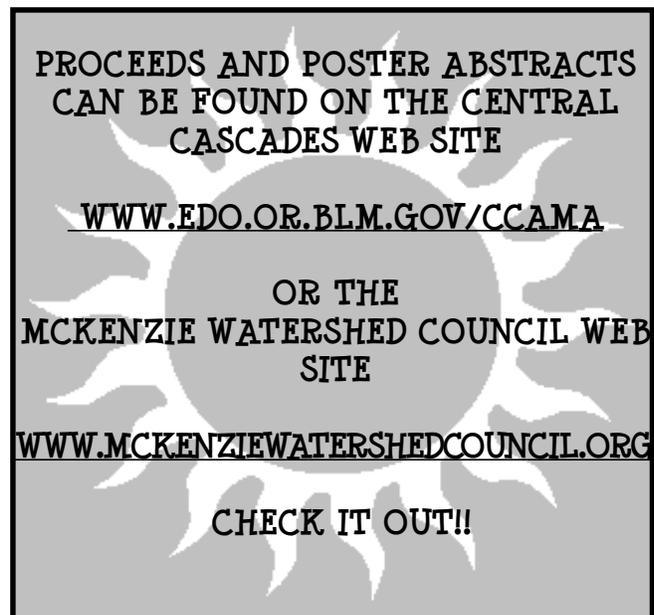
Main ingredients: hydrologists, soil scientists, engineers, botanists, foresters, biologists, managers, watershed council staff, council partners, and interested members of the public.

Stir well with information on tools, techniques, and philosophies of restoring streams and roads.

The results? A terrific opportunity for resource managers and watershed council members to share their experiences and explore new ways of doing things.

This describes the workshop held in May on "Restoring Our Streams and Roads: Sharing Adaptive Strategies." Sponsored by the Central Cascades Adaptive Management Area and the McKenzie Watershed Council, the event drew over 200 folks to a series of engaging speakers and posters exploring the state-of-the-art techniques for and philosophies around successful restoration projects.

- Cheryl Friesen, Willamette National Forest



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